



United States Department of the Interior

FISH AND WILDLIFE SERVICE
1500 Museum Road, Suite 105
Conway, Arkansas 72032



October 4, 2001

Colonel Jack Scherer
U.S. Army Corps of Engineers
167 North Main Street, Room B-202
Memphis, TN 38103-1894

Dear Colonel Scherer:

We read with great interest your July 27, 2001 response to the Service's June 22, 2001 letter which supports the rationale and concepts of "A Sustainable Alternative to Replace the Grand Prairie Area Demonstration Project." The Sustainable Alternative was presented by ten nonfederal organizations including the Augusta Chamber of Commerce, Augusta City Council, Augusta Improvement Club, Clarendon Chamber of Commerce, and several conservation organizations. We recognize that Corps has done extensive studies of the Grand Prairie Area Demonstration Project (GPADP), however, the Service continues to have concerns over the long term and cumulative impacts of the project both to the natural resources of the White River basin and to two of our most important national wildlife refuges. The Service has spent a considerable amount of time and effort working with the Corps and other agencies participating in and reviewing the numerous studies undertaken for the GPADP. Many of the issues that we have raised have been addressed, but others remain unresolved, including concerns over long term and cumulative impacts from this as well as the numerous other water development projects planned for the White River basin. Furthermore, as construction of the on-farm features progresses other environmental impacts that were not considered, or were unknown when the reevaluation study was being conducted, are now coming to light.

The Service has advised the Corps of its resource concerns in our October 27, 1993 planning aid report; May 8, 1998 Fish and Wildlife Coordination Act Report; October 5, 1998 correspondence regarding the draft General Reevaluation Report (GRR) and Environmental Impact Statement; and the Department of Interiors' February 2, 2000 correspondence regarding the Final Environmental Impact Statement and Main Report. Issues identified in these documents include the voluntary nature of conservation and on-farm features, location of irrigation reservoirs and other on-farm features in wetlands, winter flooding for waterfowl, water quality, mitigating for project impacts, project monitoring, and cumulative effects of this and other proposed irrigation projects in the White River basin. After further evaluation of pumping schedules we are concerned that lowered water levels in flood plain lakes and tributaries of the White River outside the project area but within the zone of influence of water withdrawals could adversely impact Cache River and White River National Wildlife Refuges.

Sustainability should be the primary driving force of any water management scheme for the Arkansas delta. Everyone acknowledges that change is needed. The current system of “mining” the aquifer cannot continue. Rice production, a high water use crop, has increased significantly in recent years. This high level of rice production is not a long-standing tradition in eastern Arkansas, but a relatively recent development. We may not be able to sustain our current level of rice production into the future. The Sustainable Alternative and the recent planning efforts of your staff in habitat restoration within the Grand Prairie project area recognize the need to provide farmers with an alternative land use. Regarding the widespread implementation of water conservation techniques, there are several examples of these various water saving irrigation techniques being employed in other parts of Arkansas and neighboring states. We feel that these examples support the assertion that greater water savings can be achieved than is stated in project documents or are currently being implemented.

Specific Concerns Related to Cache River and White River National Wildlife Refuges

White River National Wildlife Refuge contains 157,000 acres and Cache River National Wildlife Refuge contains 56,000 acres for a combined ownership of 213,000 acres of wetlands in the lower White River basin. The Service owns 112 miles of one or both sides of the lower White River. These wetlands are renowned internationally as an important and strategic migratory corridor for many species of migratory birds and also provide nesting habitat for many species. Neotropical birds, marsh and wading birds, shorebirds, raptors, and waterfowl all use these two refuges to fulfill their life history requirements. These two refuges, along with the Arkansas Game and Fish Commission wildlife management areas in the basin, are designated by the Ramsar Convention as a Wetland of International Importance. The area is also identified as a “Flagship” area and the most important wintering area for mallards in the Mississippi Flyway in the North American Waterfowl Management Plan. The White River basin historically has wintered 10 percent of the continental mallard population, over 30 percent of the Arkansas mallard population, and over 42 percent of all ducks in Arkansas. The refuges contain the only native population of black bear within the state, and bears from White River National Wildlife Refuge are currently being used to repatriate other parts of the state.

Refuge habitat is almost exclusively bottomland hardwood within the flood plains of the White and Cache Rivers. These two refuges contain approximately one-fourth of the remaining bottomland hardwood forest within the state. Of major importance and significance biologically is the fact that this habitat is in a large, unbroken and contiguous block. With the exception of the Atchafalya basin in southern Louisiana, which is a different type of bottomland hardwood wetland, no other bottomland hardwood wetland within the entire Mississippi River delta approaches the size of these two refuges’ bottomland hardwood wetlands. Habitat fragmentation has been recognized as a limiting factor for many species, and in particular for numerous neotropical bird species. These two refuges provide habitat for numerous species which have been impacted by fragmentation throughout Arkansas and the Mississippi delta. This large, contiguous habitat base was also responsible for allowing native black bear and wild turkey to survive during the period when they were extirpated from the rest of the state.

The Service has serious concerns related to the GPADP and its potential impacts to Cache River and White River National Wildlife Refuges. Hydrology is one of the most critical elements controlling the structure and function of the lower White River basin ecosystem. Seasonal high and low water conditions, as well as the multi-year cycles affect the chemical and physical properties of the basin's wetlands, and therefore its biotic components. The establishment and maintenance of the floral and faunal communities in the area are directly linked to the timing, duration, and height of flooding. Even small changes in hydrology can equate to significant biological effects. The way water moves through the system, however, involves a complex interaction of precipitation, runoff, groundwater, evapotranspiration, and conditions on the mainstem Mississippi River. The significance or extent of hydrologic effect in the lower basin is further complicated by its topography, elevation, and the numerous land use changes that have occurred over the past century. The Service's White River and Cache River National Wildlife Refuges are both located in the lower White River basin and would, therefore, be directly affected by any hydrologic changes that might occur.

Though principally low and flat, the lower White River basin also has a ridge and swale topography interlaced with numerous sloughs, bayous, and several hundred oxbow lakes. These sloughs and bayous, along with groundwater, provide the conduits for water to move in and out of the floodplain and oxbow lakes. This hydrological interconnectivity is critical to the biological productivity of this wetland complex. Even small alterations of the river's hydrology become significant in the lower portion of the White River basin where elevation changes of less than a foot can result in the occurrence of different plant communities, annual plant production, and wildlife use.

The White River has been altered through construction and operation of six reservoirs on the mainstem and tributaries, construction of levees, land use changes such as clearing and ditching, dredging for navigation, and secondary impacts from work on the Mississippi River. Thus the complex interaction between climatic conditions and anthropogenic alterations to the landscape in and around the White River has only served to complicate this already complex and poorly understood system. Our inadequate knowledge of the interaction of the above mentioned factors is complimented by our lack of knowledge of the fluvial geomorphology of the river. We have not even begun to study the ongoing geomorphic processes occurring or adjustments the river may be trying to make in response to these past alterations. The GPADP would add another layer of complexity and uncertainty to this process which has not been adequately evaluated.

The EIS's analysis of connectivity evaluated the river itself and surface water connectivity to selected oxbow lakes. Sub-surface connectivity, a very critical factor to the vigor and vitality of the wetlands, was not addressed. The pumping schedule for the proposed project portrays full capacity or near capacity pumping from June through August with a maximum related reduction in the river stage of one foot from the pumping site north of DeValls Bluff to Clarendon. Due to the underlying loamy porous soils, sub-surface moisture, which is directly controlled by the river stage, may be diminished. The effects of this on lakes, such as Horseshoe Lake on Cache River National Wildlife Refuge (located directly across the river

from the proposed pump intake), have not been evaluated. Other lakes, sloughs, and bayous within the affected river reach could also experience the same impact. Impacts to wetlands from altered hydrology, and potentially reduced surface and sub-surface connectivity will be subtle, take years to occur, and affect overall habitat values, including possible long term changes in species composition throughout the area.

The National Wildlife Refuge System Improvement Act of 1997 defined the mission of the National Wildlife Refuge System to “administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” This project is adjacent to both the White River and the Cache River National Wildlife Refuges, and the pump intake will be directly across the river from the Cache River National Wildlife Refuge. It is the position of the Service, therefore, that this project has the potential to significantly impair the mission of the Service as well as detract from the purposes of the White River and Cache River National Wildlife Refuges.

General Concerns for the Grand Prairie Area Demonstration Project

The voluntary nature of water conservation and on-farm features continues to be a contentious issue that ties directly to the estimates of irrigation efficiency attainable in the project area. The Natural Resources Conservation Service (NRCS) estimates average irrigation efficiencies in the project area at 60 percent (General Reevaluation Report, Volume 2, Appendix A, “NRCS On-Farm Report; 24). While they project a 10 percent increase as being realistically achievable with the installation of water conservation practices and water management techniques, no specifics are given. The On-Farm Report strongly emphasizes and virtually relies solely on construction of pipelines, reservoirs, tailwater recovery pits, and retrofitting existing irrigation systems to connect to the delivery system. It makes no specific mention of any other water conservation practices other than measuring soil moisture and irrigation scheduling.

The transcript from the May 15, 2001 irrigation efficiency meeting in Little Rock, that you provided with your July 27, 2001 correspondence, only serves to reinforce our concern over the voluntary nature of the water conservation provisions in the plan. Meeting participants made it clear that the project contained no requirements for farmers to install water conservation practices such as surge irrigation, side inlet irrigation, conservation tillage, etc. The record of the meeting showed a general agreement among those in attendance that while attaining 80 percent irrigation efficiency on individual farms is possible, attaining it over the project area is not. The record omitted some key reasons why NRCS and others did not think 80 percent irrigation efficiency is attainable over the project area. It is not that attaining 80 percent or higher irrigation efficiency is technologically infeasible, but rather that supplies and equipment needed to implement proven water saving irrigation systems are not cost shared under the project. There is a general unwillingness to require project participants, recipients of federal and state tax dollars, to implement these techniques, and the general feeling is that they would rather bring in water from an alternate source than undertake the difficult task of implementing wide spread use of different, and more efficient, on-farm water management techniques.

An estimated 8,849 acres of new irrigation reservoirs are projected to be constructed for the project. Project documents provide conflicting information about the location of irrigation reservoirs. The NRCS On-Farm Report states in no less than three places that reservoirs will be put in crop land, but it also states that no reservoirs will be placed in wetlands without the proper permits. The General Reevaluation Report (GRR) main report also has confusing statements about location of reservoirs stating on page 44 that "All reservoirs would be placed on crop land," and then on page 68 that "The new reservoirs are assumed to be located on lands identified for soybean production..." (emphasis added). Neither the Corps nor NRCS estimated any impacts to natural wetlands from construction of on-farm features. Calculations for irrigated acreage and water demand are based on locating the reservoirs on crop land. However, when it came time to start on-farm planning, NRCS and the Corps came to the agencies with a proposal to create a General Permit for impacts associated with construction of reservoirs. To date, there have been over 16 acres of wetland impacts associated with reservoir construction with plans for around 1,600 acres (150 farm plans) of the 8,849 acres of on-farm storage completed. While not a major impact at this point, it is important to recognize the over 83 percent of the presettlement bottomland hardwood forests in the project area have been cleared. The Service has objected to several of the proposed reservoir locations on the grounds that the reservoir locations were specifically planned around the wetland, the plan was not in keeping with project documents, and the impacts were avoidable.

The GRR estimated impacts to 128 acres of wetland habitats and 124 acres of upland habitats from construction of the import and delivery system. These impacts are to be mitigated by planting 243 to bottomland hardwoods and 193 acres to upland hardwoods. The NRCS only estimated impacts to 200 acres of farmed wetlands (EIS-71) from construction of on-farm features. The Corps and project sponsors have committed to mitigating for project impacts including both wetland and upland impacts. The EIS (EIS-72) stated that the project sponsor would acquire mitigation for on-farm wetland losses and that this would proceed at the same rate as construction of on-farm features. To date, neither the Corps nor the project sponsors have initiated action to acquire a mitigation site. The lack of a mitigation site is becoming problematic to the On-Farm Environmental Review Team in reviewing projects with environmental impact.

The GRR and EIS committed the Corps and project sponsors to project monitoring. Larval fish entrainment and water quality were both specifically referenced for monitoring, though other project components should also be monitored. To date, no monitoring plan has been developed even though on-farm features have been under construction for nearly a year and the Corps is preparing scopes of work for construction of the inlet canal and pump station. Establishing preproject baseline conditions is essential if the monitoring is to be at all meaningful.

The Service has and continues to emphasize the need to evaluate the cumulative effects of this and other proposed irrigation projects in the White River basin. As the project nears construction of the import and delivery system, cumulative impacts have still not been

assessed. The Cumulative Impacts section of the EIS is largely an accounting of and short narratives describing other ongoing projects in the White River basin. Interactions of the projects in the basin, especially the other proposed irrigation projects were not assessed. The cumulative impact analysis of the GPADP and the other proposed irrigation projects amounted to summing up withdrawal capacity of the proposed projects and comparing this to the withdrawal cutoff (i.e., minimum flow designation). It is hoped that the White River Basin Comprehensive Study being coordinated by the Corps will do a much more thorough evaluation of cumulative impacts of all water development and land use in the basin.

As construction of the on-farm features and detailed planning progresses, other environmental impacts that were not considered, or were unknown when the reevaluation study was being conducted, are now becoming evident. We are incurring impacts to wetland and upland habitats from construction of on-farm features that were not projected in the GRR. Some of these arise from rehabilitation of existing reservoirs, which also was not discussed in the GRR.

Many existing reservoirs in the project area were constructed years ago in wetlands, often by damming a stream or drain or by constructing levees on three sides of the lower end of a sloping field. Considerable wetland habitat either persisted or developed in these reservoirs due to topographic features within the reservoir. Rehabilitation of these reservoirs generally comprises raising the height of the levees or constructing the fourth side, thus totally enclosing the levee. Hydrologic changes and the loss of wetland vegetation, both in these reservoirs and along the fringe, are occurring due to the project, but were unanticipated in the GRR or EIS. Much of the total wetland impact mentioned above is from rehabilitation of these reservoirs.

Other unanticipated or unquantified impacts are now being recognized. For example, a tailwater pit constructed for the project was located on the edge of a protected remnant prairie slash community, one of the last examples of this habitat type remaining in the Grand Prairie region. The tailwater pit will divert sheet flow from the site, thus altering the hydrology and potentially endangering the continued existence of this remnant community. Another unanticipated impact that was recently observed was from construction of another tailwater pit near a riparian forest along Bayou LaGrue. Even though the pit itself was constructed in crop land as called for in the project documents, the spoil material/levee of this pit was partially placed in the adjacent woods. Not only does this directly impact the woods, but this spoil acts as a levee altering the flood plain and flood flow of the bayou. One other example is a proposal to construct a tailwater pit along a drainage in a forested tract.

The GRR estimated minimum aquatic resource impacts. Entrainment of larval fish was the primary impact identified. The Service voiced concern about the spread of zebra mussels to streams in the project area. Corps/WES personnel minimized this, stating "...if zebra mussels become prolific in the White River, the introduction of zebra mussels into the smaller project area streams is inevitable" (Dr. Andrew Miller, WES, pers. comm. as cited in EIS-67). Consequently, no provisions have been made to prevent possible introduction of zebra mussels into these streams. This appears to be contrary to Executive Order 13112, which

requires federal agencies whose actions may affect the status of invasive species to "... (2) use relevant programs and authorities to prevent, control, monitor, and research such species, and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere."

Another recent change effects impact calculations. Originally the project proposed to use existing channels to distribute water throughout the project area. In the aquatic HEP analysis credit was assigned to providing year round water to streams that otherwise would be dry for much of the summer. Project plans now call for the much more extensive use of pipes to distribute water, and the anticipated benefits to streams will not be realized.

The GPADP established minimum flows in the White River when water diversion will stop. The Service is heartened that this measure has been taken, especially during the high flow periods when the White River overtops its banks and floods the bottoms. Admittedly, pumping during lower flow seasons will offset higher than historical flows caused by operation of the dams in the upper reaches of the river. While reducing summer flows will allow the hydrograph to come down to more historical levels, it also sets 9,650 cubic feet per second (cfs) as the low flow standard. This flow, while within the historic range, is static; the historic hydrograph was not. We are concerned that summer flow dynamics will be reduced rather consistently to 9,650 cfs and below. The consequences of this possibility have not been evaluated.

Conclusion

There is no doubt that the alluvial aquifer under the Grand Prairie, as well as other portions of eastern Arkansas, is declining, and a solution must be found. Any solution will be difficult and contentious and involve its share of impacts to both the environment and the farm economy. It is our belief that the problems of water supply for agriculture must be solved by embracing the premise espoused by the Sustainable Alternative: that is, that the aquifer depletion problem on the Grand Prairie should be solved by attacking the problem at its source, and that we should work to bring agriculture into alignment with its sustainable water limits as the first and primary emphasis. This may be achieved by 1) maximizing water use efficiency (i.e., conservation), 2) maximizing storage of excess surface water, and 3) converting the unsustainable irrigated crop land to less water intensive uses. Construction of a water import and delivery system should only be considered as a "last resort" if the above techniques can not meet the stated goal of protecting the aquifer.

The recent problems that have arisen in the Klamath basin portent future problems in this area. When the government embarks on massive water supply projects and makes promises to the people of a region, certain expectations develop and eventual conflicts arise when the government is unable to live up to those expectations. We think this is the long term future of the White River and the Grand Prairie region. We still believe that the creative approach of the Sustainable Alternative is worthy of consideration. Furthermore, we stand by our belief that the concepts and rationale behind the proposed Sustainable Alternative represent a holistic approach to solving the aquifer depletion problems in eastern Arkansas that will serve the long term good of the region and our nation.

Because of the continuing controversy over this project, the number of project modifications and unanticipated impacts, and the undefined cumulative impacts associated with this and other projects in the White River basin, we request that you reevaluate the impacts of this project to reflect these issues. Large scale use of surface water for irrigation is new to Arkansas, and this is the first project to implement that use. It is essential that we move forward carefully to assure that we are setting good precedents.

Sincerely,

A handwritten signature in cursive script, appearing to read "Allan J. Mueller".

Allan J. Mueller
Field Supervisor

cc: Fish and Wildlife Service Regional Office, Atlanta, GA
Larry Mallard, White River NWR, DeWitt, AR
Dennis Widner, Cache River NWR, Augusta, AR
Craig Uyeda, AGFC, Little Rock, AR
Richard Prather, U.S. EPA, Region VI, Dallas, TX
Tom Foti, ANHC, Little Rock, AR
Hugh Durham, AGFC, Little Rock, AR
Ken Brazil, ASWCC, Little Rock, AR
Tony Stevenson, NRCS, Little Rock, AR
Mr. John Edwards, WRID, Stuttgart, AR
Steve Drown, ADEQ, Little Rock, AR